

**CLOSED-LOOP OPTICAL NETWORK SYSTEM AND AN  
ASSOCIATED TRANSCEIVER AND METHOD FOR  
TRANSMITTING A PLURALITY OF OPTICAL SIGNALS**

5                                    **ABSTRACT OF THE DISCLOSURE**

          A closed-loop optical network system includes a multi-mode network bus for  
transmitting a plurality of optical signals. The system further includes a multiplexer,  
a plurality of remote devices and a demultiplexer. The multiplexer can wavelength  
division multiplex a plurality of input optical signals for transmission via the network  
10 bus, where the input optical signals have a plurality of predetermined optical  
wavelengths. The remote devices are optically connected to the network bus, and can  
read optical signals having respective predefined optical wavelengths off of the  
network bus. Further, the remote devices can write optical signals having respective  
predefined optical wavelengths onto the network bus. The demultiplexer is capable of  
15 receiving optical signals having at least one of the plurality of predetermined optical  
wavelengths from the network bus and thereafter wavelength division demultiplexing  
the optical signals into a plurality of output optical signals.

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